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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/796,078	03/10/2004	Yuan-Chin Liu	TAIW 216	4258
7590 08/22/2006			EXAMINER	
RABIN & CHAMPAGNE, P.C. Suite 500 1101 14 Street, N.W. Washington, DC 20005			MORRISON, THOMAS A	
			ART UNIT	PAPER NUMBER
			3653	

DATE MAILED: 08/22/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b>		<b>Applicant(s)</b>	
	10/796,078		LIU ET AL.	
	<b>Examiner</b>		<b>Art Unit</b>	
	Thomas A. Morrison		3653	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 10 March 2004.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 10 March 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                        | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)               | Paper No(s)/Mail Date. _____  |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date <u>3/10/04</u> .   | 6) <input type="checkbox"/> Other: _____                                    |

## DETAILED ACTION

### ***Claim Rejections - 35 USC § 112***

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

1. Claims 1-20 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Regarding claim 1, it is unclear what is meant by the recited "pickup roller being driven in rotation and sliding move".

Regarding claim 1, it is unclear what is meant by the recited "rotating only when be subjected to a twist force..." (emphasis added).

Claim 1 is rejected under 35 U.S.C. 112, second paragraph, as being incomplete for omitting essential structural cooperative relationships of elements, such omission amounting to a gap between the necessary structural connections. See MPEP § 2172.01. The omitted structural cooperative relationships are: (1) the structural relationship between the twist restricting gear and the other elements of claim 1 that allows the twist restricting gear to rotate only when subjected to a twist force greater than a predetermined twist force.

Regarding claim 2, it is unclear where the twist limiter is located relative to the other elements of claims 1 and 2.

Regarding claims 6 and 13, it is unclear what is meant by the recited "other portions".

Regarding claim 8, it is unclear how the swing arms are connected to the pickup roller and the suspended arm. Is one of the swing arms connected to the pickup roller and another one of the swing arms connected to the suspended arm?

Regarding claim 9, it is unclear what is meant by the recited “**a pickup roller**, mounted in the feeder and pivotally connecting to **the pickup roller...**” (emphasis added).

Claim 9 is rejected under 35 U.S.C. 112, second paragraph, as being incomplete for omitting essential structural cooperative relationships of elements, such omission amounting to a gap between the necessary structural connections. See MPEP § 2172.01. The omitted structural cooperative relationships are: (1) the structural relationship between the twist restricting gear and the other elements of claim 9 that allows the twist restricting gear to rotate only when the set of driving gears provides a twist force greater than a predetermined twist force.

Regarding claim 10, it is unclear where the twist limiter is located relative to the other elements of claims 9 and 10.

Claim 12 recites the limitation "the pickup shaft" in line 2. There is insufficient antecedent basis for this limitation in the claim.

Regarding claim 15, it is unclear what is meant by the recited “plurality of connecting rods, respectively connecting the power input gear, the internal gear and the transmission gear”. It is unclear which of these rods connects which of these elements together. Is there one rod between the power input gear and the internal gear?

Regarding claim 16, it is unclear how many different internal gears are claimed. Are the recited first and second internal gears in claim 16 the same or different from the at least one internal gear previously set forth in claim 15?

Regarding claim 16, it is unclear how many different connecting rods are claimed. Is the recited first connecting rod in claim 16 the same or different from the plurality of connecting rods previously set forth in claim 15?

Regarding claim 18, it is unclear how many different connecting rods are claimed. Is the recited second connecting rod in claim 18 the same or different from the plurality of connecting rods previously set forth in claim 15?

### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims 1-2, 4-7, 9-10 and 12-14, as best understood, are rejected under 35 U.S.C. 102(e) as being anticipated by U.S. Patent No. 6,877,735 (Fujiwara).

Regarding claim 1, Figs. 1-5 show a paper pickup mechanism mounted on a feeder (Figs. 2-3), comprising a plurality of driving gears (one gear 27 on each side), a plurality of connecting rods (one rod 30 on each side) and a pickup roller (21), the

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pickup roller (21) being driven in rotation and sliding move to bring a topmost paper (15) in the feeder;

wherein the paper pickup mechanism further comprises a twist restricting gear (28) engaging with one of the driving gears (27) and rotating only when be subjected to a twist force greater than a predetermined twist force.

Regarding claim 2, inherently a twist limiter (i.e. whatever structure keeps gear 28 from rotating, e.g., when element 30 is being rotated downward) provides the predetermined twist force.

Regarding claim 4, as best understood, Figs. 1-5 show a transmission gear (29) engaging with the twist restricting gear (28), the transmission gear (29) pivotally connecting to the pickup roller (21) in the feeder via a pickup shaft (21a).

Regarding claim 5, Figs. 1-5 show that the transmission gear (29) is mounted on an outer side of the feeder, and the feeder has a sidewall slot (35) for the pickup shaft (21a) to penetrate through.

Regarding claim 6, Fig. 3 shows that the sidewall slot (35) has a profile of an inclined arcuate curve with an inner radius greater at its top edge than at other portions.

Regarding claim 7, Figs. 1-5 show that the twist restricting gear (28) is mounted outside the feeder.

Regarding claim 9, Figs. 1-5 show a paper pickup mechanism mounted in a paper feeder, which comprises:

a set of driving gears (one gear 27 on each side), one end of the set of driving gears being provided with a movable transmission gear (29), and a center of the transmission gear (29) pivotally connecting to a pickup shaft (21a) via element 30;

a pickup roller (21), mounted in the feeder and pivotally connecting to the pickup roller;

a set of swing arms (one arm 30 on each side), respectively connected to the pickup roller (21) and a suspended arm (32) in the feeder (i.e., one arm 30 is connected to pickup roller 21, and also the arm 30 on the other side is connected to suspended arm 32); and

a twist restricting gear (28), engaging with the transmission gear (29), wherein the twist restricting gear (28) rotates only when the set of driving gears provides a twist force greater than a predetermined twist force.

Regarding claim 10, inherently there is a twist limiter (i.e. whatever structure keeps gear 28 from rotating, e.g., when element 30 is being rotated downward) to provide a predetermined twist force.

Regarding claim 12, Figs. 1-5 show that the transmission gear (29) is mounted outside the feeder, and the feeder has a sidewall slot (35) for the pickup shaft (21a) to penetrate through.

Regarding claim 13, Figs. 1-5 show that the sidewall (35) has a profile of an inclined arcuate curve whose inner radius at its top edge is greater than at other portions.

Regarding claim 14, Fig. 3 shows that at least part of the twist limiter structure and the twist restricting gear (28) are mounted on an outer side of the feeder.

3. Claims 1-4, 8-11, 15 and 19-20, as best understood, are rejected under 35 U.S.C. 102(b) as being anticipated by U.S. Patent No. 5,547,181 (Underwood).

Regarding claim 1, Figs. 4-9 show a paper pickup mechanism mounted on a feeder, comprising a plurality of driving gears (92 and 72), a plurality of connecting rods (one connecting rod 74 and one unnumbered connecting rod between 66 and 66) and a pickup roller (56), the pickup roller (56) being driven in rotation and sliding move to bring a topmost paper (54) in the feeder;

wherein the paper pickup mechanism further comprises a twist restricting gear (70) engaging with one of the driving gears (72) and rotating only when be subjected to a twist force greater than a predetermined twist force.

Regarding claim 2, Fig. 5 shows a twist limiter (including 80) that provides the predetermined twist force.

Regarding claim 3, Fig. 5 shows that the twist limiter (including 80) is a twist spring.



Regarding claim 4, Figs. 4-9 show a transmission gear (68) engaging with the twist restricting gear (70), the transmission gear (68) pivotally connecting to the pickup roller (56) in the feeder via a pickup shaft (shaft of pickup roller 56).

Regarding claim 8, Figs. 4-9 show a set of swing arms (58 and 60) connecting to the pickup roller (56), and a suspended arm (e.g., the corner snubber arm directly above element 96 in Fig. 4) in the feeder.

Regarding claim 9, Figs. 4-9 show a paper pickup mechanism mounted in a paper feeder, which comprises:

a set of driving gears (including 92 and 72), one end of the set of driving gears being provided with a movable transmission gear (68), and a center of the transmission gear (68) pivotally connecting to a pickup shaft (shaft of pickup roller 56);

a pickup roller (56), mounted in the feeder and pivotally connecting to the pickup roller;

a set of swing arms (58 and 60), respectively connected to the pickup roller (56) and a suspended arm (62) in the feeder; and

a twist restricting gear (70), engaging with the transmission gear (68), wherein the twist restricting gear (70) rotates only when the set of driving gears provides a twist force greater than a predetermined twist force.

Regarding claim 10, Fig. 5 shows a twist limiter (including 80) to provide a predetermined twist force.

Regarding claim 11, Figs. 4-9 show that the twist limiter (including 80) is a twist spring.

Regarding claim 19, Figs. 4-9 show that the set of swing arms (58 and 60) includes a first arm (58) and a second arm (60) which interconnect to each other, one end of the first arm (58) connecting to a suspended arm (62), and one end of the second arm (60) connecting to the pickup roller (56).

Regarding claim 20, Fig. 4 shows that the feeder is a vertical type feeder.

The rejection of claim 15 relies upon different elements than those outlined above in the rejection of claim 9. Thus, following rejection of claim 15 includes all of the elements of claim 9 and claim 15.

Regarding claim 15, Figs. 4-9 show a paper pickup mechanism mounted in a paper feeder, which comprises:

- a set of driving gears (including 66, 66 and 64), one end of the set of driving gears being provided with a movable transmission gear (64), and a center of the transmission gear (64) pivotally connecting to a pickup shaft (i.e., shaft of pickup roller 56);

- a pickup roller (56), mounted in the feeder and pivotally connecting to the pickup roller;

- a set of swing arms (60 and 74), respectively connected to the pickup roller (56) and a suspended arm (shaft of gear 72) in the feeder; and

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a twist restricting gear (70), engaging with the transmission gear (64), wherein the twist restricting gear (70) rotates only when the set of driving gears provides a twist force greater than a predetermined twist force.

Also, the set of driving gears (including 66, 66 and 64) comprises:

a power input gear (uppermost gear 66), inputting a power from a power source (90);

at least one internal gear (other gear 66), engaging with the power input gear (uppermost gear 66) and transmission gear (64); and

a plurality of connecting rods (i.e., shaft (connecting rod) of uppermost gear 66, connecting rod 58, shaft (connecting rod) of the other gear 66, and connecting rod 62), respectively connecting the power input gear (uppermost gear 66), the internal gear (other gear 66) and the transmission gear (64).

### ***Conclusion***

4. The fact that not all of the claims have been rejected in view of prior art is not an indication that such claims contain allowable subject matter, particularly in view of the rejections under 35 U.S.C. 112, second paragraph outlined above.


5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thomas A. Morrison whose telephone number is (571) 272-7221. The examiner can normally be reached on M-F, 8am - 5pm.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Patrick Mackey can be reached on (571) 272-6916. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

08/10/2006



**PATRICK MACKEY  
PRIMARY EXAMINER**